



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

M

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,340	08/26/2003	Hirotaka Higashimori	241911US3	3514

22850 7590 08/20/2004

OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.  
1940 DUKE STREET  
ALEXANDRIA, VA 22314

EXAMINER

VERDIER, CHRISTOPHER M

ART UNIT PAPER NUMBER

3745

DATE MAILED: 08/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/647,340

Applicant(s)

HIGASHIMORI ET AL.

Examiner

Christopher Verdier

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 5-7 is/are rejected.
- 7) ☒ Claim(s) 4/1, 4/2, 4/3 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the rotation radius of the second pint from the rotation axis being larger than that of the third point from the rotation axis (claim 3, lines 17-19 and claim 7, lines 21-23) must be shown as a separate figure, or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to under 37 C.F.R. 1.84(h) because figures 1A and 1B, figures 4A-4C, and figures 7A-7C are connected together by projections, which is impermissible.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified

Art Unit: 3745

and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

The disclosure is objected to because it is replete with clerical and grammatical errors too numerous to mention in all instances. The following are several examples of defects. Applicants should carefully proofread the specification for additional defects. Appropriate correction is required.

Page 4, line 19 is non-idiomatic.

Page 4, lines 23-24 are non-idiomatic.

On page 5, line 15, the symbol for the flow angle  $\beta$  is missing for element 109.

On page 6, line 17, the symbol for the flow angle  $\beta$  is missing for element k.

On page 10, line 13, "8" should be changed to -- 208 --.

### *Examiner's Suggestions to Claim Language*

The following are suggestions to improve the clarity and precision of the claims:

In claim 5, line 1, "rotor blade" may be changed to -- rotor blade arrangement --.

In claim 6, line 1, "rotor blade" may be changed to -- rotor blade arrangement --.

In claim 7, line 1, "rotor blade" may be changed to -- rotor blade arrangement --.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5, and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Soviet Union Patent 373,438. Note the mixed flow turbine comprising a hub 1 attached to an unnumbered rotation axis; and a plurality of rotor blades 2, each of which is attached to the hub in a radial direction, with the hub being rotated based on fluid supplied to a rotation region of the rotor blades, and each of the plurality of rotor blades has a curved shape 3 that convexly swells on a supply side of the fluid (near 3), wherein each edge of the plurality of rotor blades has first to third points in the curved shape on the supply side of the fluid, the first point is a point where the rotor blade is attached to the hub, the third point is a point as a farther point from the first point, the second point is a middle point between the first and third points, the rotation radius of the second point from the rotation axis is larger than that of the third point from the rotation axis, the rotation radius of the third point from the rotation axis is larger than that of the midpoint on the straight line connecting between the first point and the third point from the rotation axis, and the rotation radius of the midpoint from the rotation axis is larger than that of the first point from the rotation axis.

Claims 1, 2, and 5-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Sharp 1,987,082 (figure 1). Note the turbine comprising a hub 31 attached to an unnumbered rotation

Art Unit: 3745

axis; and a plurality of rotor blades 32, each of which is attached to the hub in a radial direction, with the hub being rotated based on fluid supplied to a rotation region of the rotor blades, and each of the plurality of rotor blades has a curved shape at 32 that convexly swells on a supply side of the fluid (at 32), wherein each edge of the plurality of rotor blades has first to third points in the curved shape on the supply side of the fluid, the first point is a point where the rotor blade is attached to the hub, the third point is a point as a farther point from the first point, the second point is a middle point between the first and third points, the rotation radius of the third point from the rotation axis is larger than that of the second point from the rotation axis, the rotation radius of the second point from the rotation axis is larger than that of the midpoint on the straight line connecting between the first point and the third point from the rotation axis, and the rotation radius of the midpoint from the rotation axis is larger than that of the first point from the rotation axis. The recitation in the preamble of claim 1, line 1 of "A mixed flow turbine" does not limit claim 1 and its dependent claims to a mixed flow turbine, because the body of the claim following the preamble is a self-contained description of the structure and does not depend on the preamble for completeness. *Kropa v. Robie*, 88 USPQ at 480-481; *Rowe*, 42 USPQ2d at 1553; and *IMS Technology Inc. v. Haas Automation Inc.*, 54 USPQ2d 1129, 1137 (Fed. Cir. 2000). The recitation in claim 5, lines 1-2 of "used in a mixed flow turbine" is a recitation of intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152

Art Unit: 3745

USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In addition, the recitation in the preamble of claim 5, lines 1-2 of "A mixed flow turbine" does not limit claim 5 and its dependent claims to a mixed flow turbine, because the body of the claim following the preamble is a self-contained description of the structure and does not depend on the preamble for completeness.

Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Soviet Union Patent 1,178,903. Note the turbine comprising an unnumbered hub attached to a rotation axis a-a; and a plurality of rotor blades 2, each of which is attached to the hub in a radial direction, with the hub being rotated based on fluid supplied to a rotation region of the rotor blades, and each of the plurality of rotor blades has a curved shape at 5 that convexly swells on a supply side of the fluid (at 5). The recitation in the preamble of claim 1, line 1 of "A mixed flow turbine" does not limit claim 1 to a mixed flow turbine, because the body of the claim following the preamble is a self-contained description of the structure and does not depend on the preamble for completeness. *Kropa v. Robie*, 88 USPQ at 480-481; *Rowe*, 42 USPQ2d at 1553; and *IMS Technology Inc. v. Haas Automation Inc.*, 54 USPQ2d 1129, 1137 (Fed. Cir. 2000). The recitation in claim 5, lines 1-2 of "used in a mixed flow turbine" is a recitation of intended use. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA

Art Unit: 3745

1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). In addition, the recitation in the preamble of claim 5, lines 1-2 of "A mixed flow turbine" does not limit claim 5 to a mixed flow turbine, because the body of the claim following the preamble is a self-contained description of the structure and does not depend on the preamble for completeness.

#### ***Prior Art***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kofink is cited to show a mixed flow radial turbine.

#### ***Allowable Subject Matter***

Claims 4/1-4/3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (703)-308-2638. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

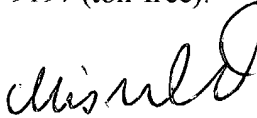
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (703) 308-1044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 3745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.V.  
August 17, 2004

  
Christopher Verdier  
Primary Examiner  
Art Unit 3745